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APPLICANT (S) Jack C. Whittier, Barbi A. Riggs, Patrick D. Burns, George Seidel

FILING DATE June 12, 2001

**ART UNIT** 



I.		U.S. PATI	ENT DOCUMENT	S	, A	6-07 26-07
EXAMINER INITIALS	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	32,350	02/10/87	Bhattacharya	204	180.1	11/22/74
OM	3,687,806	08/29/72	Van den	195	1.3	11/04/69
	3,829,216	08/13/74	Persidsky	356	36	
	3,894,529	07/15/75	Shrimpton	128	1 R	04/10/69
	4,009,260	02/22/77	Ericsson	424	105	12/11/74
	4,067,965	01/10/78	Bhattacharya	424	105	12/17/75
	4,083,957	04/11/78	Lang	424	78	02/04/76
	4,085,205	04/18/78	Hancock	424	105	01/24/77
	4,092,229	05/30/78	Bhattacharya	204	180 R	10/20/76
	4,155,831	05/22/79	Bhattacharya	207	299 R	02/23/78
	4,191,749	03/04/80	Bryant	424	105	10/11/77
	4,225,405	09/30/80	Lawson	204	180 R	08/16/78
	4,276,139	06/30/81	Lawson	204	180 R	10/09/79
	4,339,434	07/13/82	Ericsson	424	105	08/17/81
	4,362,246	12/07/82	Adair	209	3.3	07/14/80
	4,448,767	05/15/84	Bryant	424	85	02/15/80
	4,501,366	02/26/85	Thompson	209	556	12/14/82
	4,511,661	04/16/85	Goldberg	436	503	12/30/83
ŀ	4,660,971	04/28/87	Sage et al.	356	39	05/03/84
	4,680,258	07/14/87	Hammerling et al	435	7	08/09/83
	4,680,258	07/14/87	Hammerling et al	435	7	08/09/83
	4,698,142	10/06/87	Muroi et al	204	182.3	07/31/85
	4,749,458	06/07/88	Muroi et al	204	182.3	03/02/87
	4,988,619	01/29/91	Pinkel	435	30	11/30/87
	4,999,283	03/12/91	Zavos et al	435	2	08/18/89
	5,021,244	06/04/91	Spaulding	424	561	05/12/89
	5,135,759	08/04/92	Johnson	424	561	04/26/91
	5,346,990	09/13/94	Spaulding	530	350	03/12/91
	5,371,585	12/06/94	Morgan et al.	356	246	11/10/92
	5,439,362	08/08/95	Spaulding	424	185.1	07/25/94
	5,466,572	11/14/95	Sasaki et al.	435	2	04/25/94

Cus	5,483,469	01/09/96	Van den Engh et al.	364	555	08/02/93
	5,503,994	04/02/96	Shear et al.	436	90	10/08/93
	5,514,537	05/07/96	Chandler	435	2	11/28/94
	5,589,457	12/31/96	Wiltbank	514	12	07/03/95
	5,602,039	02/11/97	Van den Engh	436	164	10/14/94
	5,602,349	02/11/97	Van den Engh	73	864.85	10/14/94
	5,660,997	08/26/97	Spaulding	435	7.21	06/07/95
	5,690,895	11/25/97	Matsumoto et al.	422	73	12/06/96
	5,700,692	12/23/97	Sweet	436	50	09/27/94
	5,726,364	03/10/98	Van den Engh	73	864.85	02/10/97
	5,880,457	03/09/99	Tomiyama et al.	250	207	06/16/97
	5,985,216	11/16/99	Rens et al.	422	73	07/24/97
	6,071,689	06/06/00	Seidel et al.	435	2	01/29/98

## II.

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NO	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATIO N	
См						YES	NO
	WO 96/12171	10/13/95	US	6			
	WO 98/34094	06/08/98	NZ				
	WO 99/05504	07/24/98	US				
	WO 99/33956	08/07/99	US				
	WO 99/38883	05/08/99	US				
	WO 99/42810	08/26/99	us				
	WO 00/06193	10/02/00	us				
							,

## III. OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

OM	Akhtar, S., et al., Prevalence of Five Stereotypes of Bluetongue Virus in a Rambouillet Sheep Flock in Pakistan@, Veterinary Record 136, 1995, p. 495.
	Akhtar, S., et al., ASex Preselected in Cattle: a Field Trial @, Veterinary Record 136, 1995, p. 495-496.
	Aldrich, S. L., Berger, L.L., Reiling, B.A., Kegler, D.I., and Nagh, T.G 1995. "Parturition and periparturient reproductive and metabolic hormone concentration in prenatally androgenized beefheifer", I. Anim. Sci. 73:3712.
ON	Amann, R. P. "Issues affecting commercialization of sexed sperm". Therio: 52:1441, 1999
	Amann, R.P. et al, "Prospects For Sexing Mammalian Sperm," Colorado Associated University Press, Animal Reproduction Laboratory College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO, 80523, 1982

СИ	American Meat Science Association in cooperation with National Livestock and Meat Board. "Research guidelines for cookery, sensory evaluation and instrumental tenderness measurements of fresh meatK", 1995
	Amoah, E.A. and Gelaye, S. 1996. Biotechnological advances in goat reproduction. J. Anim. Sci. 75(2):578-585.
	Andersen, V.K., Aamdal, J. and Fougner, J.A. 1973. Intrauterine und tiefzervikale Insemination mit Gefriersperma bein Schat. Zuchthygiene. 8:113-118.
	Applying Semen Sexing Technology to the Al Industry@, National Association of Animal Breeders, September 2000, pp. 1-16
	Bagley, C. P. 1993. Nutritional management of replacement beef heifers - A review. J. Anim. Sci. 71:3155-3163.
	Bailey, C. M., Reid, C.R., Ringkob, T.P., Koh, Y.O., and Foote, W.D. "Nulliparous versus primiparous crossbred females for beef." J. Anim. Sci. 69:1403., 1991
	Baker, R.D., Dziuk, P.J. and Norton, H.W. 1968. Effect of volume of semen, number of sperm and drugs on transport of sperm in artificially inseminated gilts. J. Anim. Sci. 27:88-93.
-	Barnes, F.L and Eyestone, W.H., AEarly Cleavage and the Maternal Zygotic Transition in Bovine Embryos@, Theriogenology, Vol. 33, No. 1, January 1990, pp. 141-149
	Becker, S.E. and Johnson, A.L. 1992. Effects of gonadotropin releasing hormone infused in a pulsatite or continuous fashion on serum gonadotropin concentrations and ovulation in the mare. J. Anim. Sci. 70:1208-1215.
	Bedford, S.J. and Hinrichs, K. 1994. The effect of insemination volume on pregnancy rates of pony mares. Theriogenology 42:571-578.
	Bellows, R. A., Short, R.E., Anderson, D.C., Knapp, B.W., and Pahnish, O.F. "Cause and effect relationships associated with calving difficulty and calfbirth weight", J. Anim. Sci. 33:407, 1971
	Berardinelli, J. G., R. A. Dailey, R. L. Butcher, and E. K.Inskeep. "Sourceof progesterolle prior to puberty in beef heifers". J. Anim. Sci. 49:1276., 1979
	Berger, G.S. 1987. Intratubal insemination. Fert. Steril. 48:328-330.
	Bergfeld, E. G., Kojima, F.N., Cupp, A.S., Wehnnan, M.E., Peters, K.T., Garciawinder, M., and Kinder, J.E., "Ovarian follicular development in prepubertal heifers is influenced by level of dietary energy-intake", Bio. of Repro. 51:1051, 1994
	Berry, B. W., Smith, G.C., and Carpente.zl, "Beef carcass maturity indicators and palatability attributes", J. Anim. Sci. 38:507, 1974
	Beyhan, Z., et al., ASexual Dimorphism in IVM-IVF Bovine Embryos Produced from X and Y Chromosome-bearing Spermatozoa Sorted by High Speed Flow Cytometry@, Theriogenology 52, 1999, pp. 35-48.
	Blanchard, T. and Dickson, V., Stallion Management, The Veterinary Clinics of North America, Equine Practice, Vol. 8, No. 1, April 1992, pp 207 - 218.
	Bond, J., et al., "Growth and carcass traits of open beef heifers versus beef heifers that have calved", Nutrition Reports International 34:621. 1986
	Boucque, C. V., et al., "Beef-production with maiden and once-calved heifers", Livestock Prod. Sci. 7:121. 1980
	Bourdon, R. M. and J. S. Brinks. "Simulated efficiency of range beef-production". Culling strategies and nontraditional management-systems. J. Anim. Sci.65:963. 1987
	Bracher, V. and Allen, W.R., AVideoendoscopic Examination of the Mare=s Uterus: Findings in Normal Fertile Mares@, Equine Veterinary Journal, Vol. 24 (1992), pp. 274-278
	Braselton, W.E. and McShan, W.H. 1970. Purification and properties of follicle stimulating and luteinizing hormones from horse pituitary glands. Arch. Biochem. Biophys. 139:45-48.
	Brethour, J. R., "The single-calfheifer system", Kans. Agric. Sta. Rep. Frog. 570. 1989
	Brethour, J.R. and Jaeger, J.R., "The Single Calf Heifer System", Kansas Agric. Sta. Rep of Progress 570, 1989.
	Bristol, S.P. 1982. Breeding behavior of a stallion at pasture with 20 mares in synchronized oestrus. J. Reprod. Fert. Suppl. 32:71.
	Brookes, A. J. and Obyme, M., "Use of cow-heifers in beef production", J. of the Royal Agricultural Society of England 126:30, 1965

Ċм	Buchanan, B.R., et al, Alnsemination of Mares with Low Numbers of Either Unsexed or Sexed Spermatozoa@, Theriogenology, Vol. 53, pp 1333-1344, (2000)
	Burns, P. D. and Spitzer, J.C., "Influence ofbiostimulation on reproduction in postpartum beef-cows", J. Anim. Sci. 70:358. 1992
	Burwash, L.D., Pickett, B.W., Voss, J.L. and Back, D.G. 1974. Relatioship of duration of estms to pregnancy rate in normally cycling, non-lactating mares. J.A.V.M.A. 165:714-716.
	Byerley, D. J., et al., "Pregnancy rates of beef heifers bred either on puberal or 3rd estrus". J Anim. Sci. 65:645. 1987
	Caslick, E.A., AThe Vulva and the Vulvo-vaginal Orifice and its Relation to Genital Health of the Thoroughbred MareA, Cornell Veterinarian, Vol. 27, 1937, pp. 178-187
	Catt, et al., AAssessment of Ram and Boar Spermatozoa During Cell-Sorting by Flow Cytometry@, Reproduction Dom Animal, Vol. 32, 1997, pp 251-258.
	Catt, S.L., et al., ABirth of a Male Lamb Derived from an In Vitro Matured Oocyte Fertilized by Intracytoplasmic Injection of a Single Presumptive Male Sperm@, Veterinary Record 139, 1996, pp. 494-495.
	Cattell, et al., AAssesment of Ram and Boar Spermatozoa During Cell-Sorting by Flow Cytometry@, Reproduction Dom Animal, Vol. 32, pp 251-258 (1997)
	Chin, W.W. and Boime, I. 1990. In: Glycoprotein Hormones. Serona Symp. Norwell, MA. pp. 19-20
	Chung, Y.G., Schenk, J.L., Herickhoff, L.A. and Seidel, G.E. Jr. 1998. Artificial insemination of superovulated heifers with 600,000 sexed sperm. J Anim. Sci. Suppl. 1. 836:215. abstr.
	Clement, F., Vincent, P., Mahla, R., Meriaux, J.C. and Palmer, E. 1998. Which insemination fertilizes when several successive inseminations are performed before ovulation. 7 <sup>th</sup> Int. Symp. Eq. Repro. 151. abstr.
	Coleou, J., et al., "Essai de velage tres precoce de genisses en vue de la production de viande." Essai Vauz/ Aure no.50, programme USFGC-INAPG-ITFC. 1974
	Cran, D.G., et al, AProduction of Lambs by Low Dose Intrauterine Insemination with Flow Cytometrically Sorted and Unsorted Semen@, Theriogenology, Vol. 47, pp. 267, (Abstract), (1997)
	Cran, D.G., et al., AProduction of Bovine Calves Following Separation of X- and Y- Chromosome Bearing Sperm and In Vitro Fertilisation@, Veterinary Record 132, 1993, pp. 40-41.
	Crowley, J. P. The facts of once-bred heifer production. (Ed) J.B. Owens. The maiden female-a means of increasing meat production. School of Agric., Univ. of Aberdeen, Scotland. 1973
	Curran, S. 1998. In: Equine Diagnostic Ultrasonography. Fetal gender determination. Rantanen & McKinnon. 1 <sup>st</sup> Ed. Williams and Wilkins. pp. 165-169.
	Day, B.N., Abeydeera, L.R., Johnson, L.A., Welch, G.R., Wang, W.H., Cantley, T.C. and Rieke, A. 1998 Birth of piglets preselected for gender following in vitro fertilization of in vitro matured pig occytes by X and Y bearing spermatozoa sorted by high speed flow cytometry. Theriogenology. 49(1):360. abstr.
	Dean, P.N., Pinkel, D. and Mendelsob. n, M.L. 1978. Hydrodynamic orientation of spermatozoa heads for flow cytometry. Biophys. J. 23:7-13.
	Demick, D.S., Voss, J.L. and Pickett, B.W. 1976. Effect of cooling, storage, glycerization and spermatozoal numbers on equine fertility. J. Anim. Sci. 43:633-637.
	DenDaas, J.H.G., De Jong, G., Lansbergen, L.M.T.E. and Van Wagtendonk-De Leeuw, A.M. 1998. The relationship between the number of spermatozoa inseminated and the reproductive efficiency of dairy bulls. J Dairy Sci. 81: 1714-1723.
	Denham, A. "In-vitro studies on sandhill range forage as related to cattle preference", M.S. Thesis. 1965. Colorado State University.
	Deutscher, G. H. "Extending interval from seventeen to nineteen days in the melengestrol acetate-prostaglandin estrous synchronization program for heifers". The Professional Animal Scientist 16:164. 2000
	Diagnostic Products Corporation. Coat-A-Count@ Progesterone.com. 1998.
	Dikeman, M. E. "Cattle production systems to meet future consumer demands. J. Anim. Sci. 59:1631, 1984
	Dinnyes, A., et al., ATiming of the First Cleavage Post-insemination Affects Cryosurvival of In Vitro-produced Bovine Blastocysts@, Molec Reprod develop 53, 1999, pp 318-324.

Con	Donaldson, L. E., AEffect of Insemination Regimen on Embryo Production in Superovulated Cows@, The Veterinary Record, July 13, 1985, pp. 35-37
	Donoghue, A.M., Byers, A.P., Johnston, L.A., Armstrong, D.L. and Wildt, D.E. 1996. Timing of ovulation after gonadotropin induction and its importance to successful intrauterine insemination in the tiger (Panthera tigris). J. Reprod. Fert. 107:53-58.
	Douglas, R.H., Nuti, L. and Ginther, O.J. 1974. Induction of ovulation and multiple ovulation on seasonally-anovulatory mares with equine pituitary fractions. Theriogenology. 2(6): 133-142.
	Douglas, R.H. 1979. Review of superovulation and embryo transfer in the equine. Theriogenology. 11:33-46.
	Doyle, S. P., et al. "Artificial insemination of lactating angus cows with sexed semen". Proc. Western Sect. Am.Soc.Anim. Sci. 50:203. 1999
	Duchamp, G., Bour, B., Combamous, Y. and Palmer, E. 1987. Alternative solutions to hCG induction of ovulation in the mare. J. Reprod. Fert. Suppl. 35:221-228.
	Evans, M.J. and Irvine, C.H.G. 1977. Induction of follicular development, maturation and ovulation by gonadotropin releasing hormone administration to acyclic mares. Bio. Reprod. 16:452-462.
	Ferrel 1, C. L. and T. G. Jenkins. "Energy-Utilization by Mature, nonpregnant, nonlactating cows of different types" J. Anim. Sci. 58:234. 1984
	Ferrell, C. L. "Effects ofpost-weaning rate of gain on onset of puberty and productive performance of heifers of different breeds. J. Anim. Sci. 55:1272. 1982
	Field, R. A., et al., "Bone-ossification and carcass characteristics ofwethers given silastic implants containing estradiol". I. Anim. Sci. 68:3663-3668. 1990
	Field, R., R. et al., "Growth, carcass, and tenderness characteristics of virgin, spayed, and single-calfheifers.", J. Anim. Sci. 74:2178. 1996
	Fitzgerald, B.P., Peterson, K.D. and Silvia, P.J. 1993. Effect of constant administration of a gonadotropin-releasing hormone agonist on reproductive activity in mares: Preliminary evidence on suppression of ovulation during the breeding season. Am. J. Vet. Res. 54:1746-1751.
	Fluharty, F. L., et al., "Effect of weaning and diet on growth of calves." Research and Reviews. The Ohio State University Department of Animal Sciences. 1996
	Fluharty, F.L., et al., "Effects of Age at Weaning and Diet on Growth of Calves", Ohio Agri. Res. and Dev. Circular, 1996, 156: 29.
	Foulkes, J.A., Stewart, D.L. and Herbert, C.N. 1977. Artificial insemination of cattle using varying numbers of spermatozoa. Vet. Rec. 101:205.
	Fugger, E.F., AClinical Experience with Flow Cytometric Separation of Human X- and Y- Chromosome Bearing Sperm@, Theriogenology, Vol. 52, pp. 1435-1440 (1999)
	Fulwyler, M.J. 1977. Hydrodynamic orientation of cells. J Histochem. Cytochem. 25:781-783.
	Fulwyler, M.J. 1965. Electronic separation of biological cells by volume. Science. 150:910.
	G.E. Seidel, Jr., "Artificial Insemination With X-and Y-Bearing Bovine Sperm", Animal Reproduction and Biotechnology Laboratory, Colorado State University, Fort Collins, CO; Germplasm and Gamete Physiology Lab, ARS, USDA, Beltsville, MD; Atlantic Breeders Coop, Lancaster, PA; DUO Diary, Loveland, CO, USA January 1996.
	Garner, D.L., Gledhill, B.L., Pinkel, D., Lake, S., Stephenson, D., Van Dilla, M.A. and Johnson, L.A. 1983. Quanti-cation of the X and Y chromosome-bearing spermatozoa of domestic animals by flow cytometry. Biol. Reprod. 28:312-321.
CH	Ginther, O.J. 1983. Sexual behavior following introduction of a stallion into a group of mares. Theriogenology. 19:877.
	Ginther, O.J. 1992. In: Reproductive Biology of the Mare. (2nd Ed.) Equiservices, Cross Plains, WI.
CM	Gledhill, B.L. 1988. Gender preselection: historical, technical and ethical perspective. Semin Reprod. Endocrinol. 6:385-395.
	Gombe, S. and Hansel, W. "Plasma luteinizing-hormone (LH) and progesterone levels in heifers on restricted energy intakes." J. Anim. Sci. 37:728. 1973
	Gourley, D.D. and Riese, R.L. 1990. Laparoscopic artificial insemination in sheep. Vet. Clin. N. Amer: Food Anim. Prac. 6(3):615-633.
	Gravert, H. O., "Genetic Aspects of Early Calving." In: J.C. Taylor (Ed.) The early calving of heifers and it's impact on beef production. 59. 1975
1	

Cay	Gregory, K. E., et al., "Characterization of biological types of cattle III .2." Growth-rate and puberty in females. J. Anim. Sci. 49:461. 1979
	Grimes, I. F, and T. B. Turner. "Early weaning of fall born calves II." Post weaning performance of early and normal-weaned calves. I. Prod. Agric. 4:168. 1991
	Grondahl, C., et al, Aln Vitro Production of Equine Embryos@, Biology of Reproduction, Monograph Series I, pp. 299-307 (1995)
	Guillou, F. and Combamous, Y. 1983. Purification of equine gonadotropins and comparative study of their acid-dissociation and receptor-binding specificity. Biochem. Biophys. Acta. 755:229-236.
	Gurnsey, M.P., and Johnson, L.A., ARecent improvements in efficiency of flow cytometric sorting of X and Y-chromosome bering sperm of domestic animals: a review@, 1998, New Zealand Society of Animal Protection, three pages.
	Hall, J. B., et al., "Effect of age and pattern of gain on induction of puberty with a progestin in beef heifers." J. Anim. Sci. 75:1606. 1997
	Hamano, K., et al., AGender Preselection in Cattle with Intracytoplasmically Injected, Flow Cytometrically Sorted Sperm Heads@, Biology of Reproduction 60, 1999, pp. 1194-1197.
	Harrison, L.A., Squires, E.L. and McKinnon, A.O. 1991. Comparison of hCG, buserelin and luprostiol for induction of ovulation in cycling mares. Eq. Vet. Sci. 3:163-166.
	Harte, F. J. "System of production ofbeeffrom once calved heifers." In: J.C. Taylor (Ed.) The early calving ofheifers and it's impact on beef production. 123. 1975
	Hawk, H. AFertilization Rates in superolvulating cows after deposition of semen on the infundidlum near the uterotubal junction or after insemination with high numbers of sperm.@, XP-002103478, Biosis, 1988, one page.
	Hemlesmeyer, G. N., et al. "Effects of lactation and prenatal androgenization on the perfomlance, carcass coompostion and longissimus muscle sensory characteristics ofheifers in the single-calfheifer system."  The Professional Animal Scientist 15:14. 1999
	Hennegmeyer, G. N., et al. "Effects of prenatal androgenization and implantation on the performance and carcass composition of lactating heifers in the single-calfheifer system." The Professional Animal Scientist 15:173. 1999
	Hilton, G. G., et al., "An evaluation of current and alternative systems for quality grading carcasses of mature slaughter cows." I. Anim. Sci. 76:2094, 1998
	Ho, L., et al., "Influence of gender, breed and age on maturity characteristics of sheep." J. Anim. Sci. 67:2460-2470. 1989
	Hofferer, S., Lecompte, F., Magallon, T., Palmer, E. and Combamous, Y. 1993. Induction of ovulation and superovulation in mares using equine LH and FSH separated by hydrophobic interaction chromatography. J. Reprod. Fert. 98:597-602.
	Hohenboken, W. D. "Applications of sexed semen in cattle production." Therio.52:1421. 1999
	Holtan, D.W., Douglas, R.H. and Ginther, O.J. 1977. Estrus, ovulation and conception following synchronization with progesterone, prostaglandin F2 ct and human chorionic gonadotropin in pony mares. J. Anim. Sci. 44:431-437.
	Householder, D.D., Pickett, B.W., Voss, J.L. and Olar, T.T. 1981. Effect of extender, number of spermatozoa and hCG on equine fertility. J. Equine Vet. Sci. 1:9-13.
	Howard, J.G., Roth, T.L., Byers, A.P., Swanson, W.F. and Wildt, D.E. 1997. Sensitivity to exogenous gonadotropins for ovulation and laparoscopic artificial insemination in the theetab and clouded leopard. Biol. Reprod. 56:1059-1068.
	Howard, J.G., Bush, M., Morton, C., Morton, F., Wentzel, K. and Wildt, D.E. 1991. Comparative semen cryopreservation in ferrets (Mustela putorious furo) and pregnancies after laparoscopic intrauterine insemination with frozen-thawed spermatozoa. J. Reprod. Fert. 92:109-118.
	Hunter, R.H.F. 1980. Transport and storage of spermatozoa in the female reproductive tract. Proc 4 <sup>th</sup> Int. Congr. Artira. Repro. and A.I. 9:227-233.
	Hyland, J.H., Ainsworth, C.G.V. and Langsford, D.A. 1988. Gonadotropin-releasing hormone (GnRH) delivered by continuous infusion induces fertile estrus in mares during seasonal acyclicity. Proc. Amer. Assoc. Eq. Prac. 181-190.
	Irvine, C.H.G. and Alexander, S.L. 1993. <i>In:</i> Equine Reproduction. Edited by McKirmon and Voss. Lea and Febiger. Philadelphia, London. pp. 37.
	Jafar, et al., ASex Selection in Mammals: A Review@, Theriogenology, vol. 46, 1996, pp 191-200.

Си	Jarriage, R. "Age of cows at first calving in France." J.C. Taylor (Ed.) The early calving ofheifers and it's impact on beef production. 10. 1975
	Jasko, D.J., Martin, J.M. and Squires, E.L. 1992. Effect of volume and concentration of spermatozoa on embryo recovery in mares. Theriogenology. 37:1233-1239
	Johnson, L.A. and Welch, G.R., ASex Preselection: High-speed flow cytometric sorting of X and Y sperm for maximum efficiency@, Theriogenology, Vol. 52, (1999), pp. 1323-1341
	Johnson, L.A., et al, ASex Preselection in Swine: Flow Cytometric Sorting of X- and Y- Chromosome Bearing Sperm to Produce Offspring@, Boar Semen Preservation IV, 2000, pp. 107-114.
	Johnson, L.A. 1988. Flow cytometric determination of spermatozoa sex ratio in semen purportedly enriched for X or Y bearing spermatozoa. Theriogenology. 29:265. abstr.
	Johnson, A.L. and Becker, S.E. 1988. Use of gonadotropin-releasing hormone (GnRH) treatment to induce multiple ovulations in the anestrous mare. Eq. Vet. Sci. 8:130-134.
	Johnson, AGender preselection in Mammals: An overview@, Dtsch. tierarztl. Wschr, Vol. 103, Aug./Sep. 1996, pp 288-291.
	Johnson, L.A., et al., ASex Preselection in Rabbits: Live Births from X and Y Sperm Separated by DNA and Cell Sorting@, Exceptional Paper-Rapid Publication, XP-002103476, Biology of Reproduction 41, 199-203, 1989, pp 199-203.
	Johnson, L.A., Welch, G.R., Rens, W. and Dobrinsky, J.R. 1998. Enhanced flow cytometric sorting of manunalian X and Ysperm: high speed sorting and orienting no77.1e for artificial insemination.  Theriogenology. 49(1):361. abstr.
	Johnson, L.A. 1992. Gender preselection in domestic animals using flow cytometrically sorted sperm. J Anim. Sci. Suppl 1.70:8-18.
	Johnson, L.A. 1994. Isolation of X- and Y-bearing spermatozoa for sex preselection. <i>In:</i> Oxford Reviews of Reproductive Biology. Ed. HH Charlton. Oxford University Press. 303-326.
	Johnson, L.A., and Pinkel, D., AModification of a Laser-Based flow Cytometer for High-Resolution DNA Analysis of Mammalian Spermatozoa@, Cytometry 7, 1986, pp 268 - 273.
	Johnson, A.L. 1986. Pulsatile release of gonadotropin releasing hormone advances ovulation in cycling mares. B iol. Reprod. 35:1123° 1130.
	Johnson, L.A., et al., 1994. Improved flow sorting resolution of X- and Y- chromosome bering viable sperm separation using dual staining and dead cell gating. Cytometry 17 (suppl 7):83.
	Johnson, L.A., Flook, J.P., Look, M.V. and Pinkel, D. 1987b. Flow sorting of X and Y chromosome bearing spermatozoa into two populations. Gam. Res. 16:203-212.
	Johnson, LA., AAdvances in Gender Preselection in Swine@ Journal of Reproduction and Fertility Supplement, Vol. 52, pp. 255-266 (1997)
	Johnson, LA., ASex Preselection in Swine: Altered Sex Ratios in Offspring Following Surgical Insemination of Flow Sorted X- and Y- Bearing Sperm@, Reproduction in Domestic Animals, Vol. 26, pp. 309-314 (1991)
	Johnson L.A., et al., 1987. Flow cytometry of X- and Y- chromosome bearing sperm for DNA using an improved preparation method and staining with Hoechst 333-42. Garnete Research 17: 203-212
	Johnson, L.A. and Schulman, J.D. 1994. The safety of sperm selection by flow cytometry. Ham. Reprod. 9(5):758.
	Johnson, L.A. 1995. Sex preselection by flow cytometric separation of X and Y chromosome bearing spermatozoa based on DNA difference: a review. Reprod. Fert. Dev. 7:893-903.
	Joseph, R. L. and J. P. Crowley. "Meat quality of once-calved heifers." Irish J. of Agric. Research 10:281.
	Joseph, R. L. "Carcass composition and meat quality in once calved heifers." In: J.C. Taylor (Ed.) The early calving ofheifers and it's impact on beef production. 143. 1975
	Kachel, V., et al., AUniform Lateral Orientation, Cused by Flow Forces, of Flat Particles in Flow-Through Systems@, The Journal of Histochemistry and Cytochemistry, 1997, Vol. 25, No. 7, pp 774 - 780.
	Kanayama, K., Sankai, T., Nariaik, K., Endo, T. and Sakuma, Y. 1992b. Pregnancy by means of tubal insemination and subsequent spontaneous pregnancy in rabbits. J. Int. Med. Res. 20:401-405.
	Karabinus, et al., AEffects of Egg Yolk-Citrate and Milk Extenders on Chromatin Structured Viability of Cryopreserved Bull Sperm@, Journal of Dairy Science, Vol. 74, No. 11, 1999, pp 3836-3848.

	Keeling, P. C. B. M. S. T. G. D. I. a. P. W. J., "A modelling study of once-bred heifer beef production."  Proceedings of the New Zealand Society of Animal Production. 51. 1991
	Kilicarslan, M.R., Horoz, H., Senunver, S.C., Konuk, S.C., Tek, C. and Carioglu, B. 1996. Effect of GrnRH and hCG on ovulation and pregnancy in mares. Vet. Rec. 139:119-120.
	Kinder, J. E., et al., 1987. Endocrine regulation ofpuberty in cows and ewes." J. of Repro. and Fertility, Suppl. 34:167. 1987
	Kinder, J. E., et al. "Endocrine basis for puberty in heifers and ewes." J. Repro. and Fertility 393. 1995
	Klindt, J. and J. D. Crouse. "Effect of ovariectomy and ovariectomy with ovarian auto transplantation on feedlot performance and carcass characteristics of heifers." J. Anim. Sci. 68:3481. 1990
	Klosterman, E. W. and C. F. Parker. "Effect of size, beed and sex upon feed efficiency in beef cattle." North Central Regional Research Publication 235, Ohio Agric. Research and Development Center 1090:3. 1976
	Kniffen, D. M., Wagner, W.R., and Lewis. P.E. "Effects oflong-tenn estrogen implants in beef heifers." I. Anim. Sci. 77:2886. 1999
	Koch, R. M., et al., "Characterization of biological types of cattle -Cycle-II .3." Carcass composition, quality and palatability. I. Anim. Sci. 49:448. 1919
	Lapin, D.R. and Ginther, O.J. 1977. Induction of ovulation and multiple ovulations in seasonally anovulatory and ovulatory mares with an equine pituitary extract. J. Anim. Sci. 44:834-842.
	Laster, D. B., "Factors affecting dystocia and effects of dystocia on subsequent reproduction in beef-cattle." J. Anim. Sci. 36:695. 1973
	Lawrenz, R. 1985. Preliminary results of non-surgical intrauterine insemination of sheep with thawed frozen semen. J S Afr. Vet. Assoc. 56(2):61-63.
Ch_	Levinson, G., Keyvanfar, K., Wu, J.C., Fugger, E.F., Fields, R.A., Harton, G.L., Palmer, F.T., Sisson, M.E., Starr, K.M., Dennison-Lagos, L., Calvo, L., Sherins, R.J., Bick, D., Schulman, J.D. and Black, S.H. 1995. DNA-based X-enriched sperm separation as an adjunct to preimplantation genetic testing for the preparation of X-linked disease. Mol. Human Reprod. 10:979-982.
	Lindsey, A., et al., AHysteroscopic Insemination of Mares with Nonfrozen Low-dose Unsexed or Sex- sorted Spermatozoa@, currently unpublished, pp. 1-15.
	Linge, F. 1972. Faltforsok med djupfrost sperma (field trials with frozen sperm). Farskotsel. 52:12-13.
Con	Lonergan, P., et al., AEffect of Time Interval from Insemination to First Cleavage on the Development of Bovine Embryos In Vitro and In Vivo@, Theriogenology, 1999, p. 326
	Long, C.R., Rath, D., Welch, G.R., Schreier, L.L., Dobrinsky, J.R. and Johnson, L.A. 1998. Aln vitro production of porcine embryos from semen sorted for sex with a high speed cell sorter: comparison of two fertilization media. (2), Theriogenology. 49(1):363. abstr.
	Long, C.R., Rath, D., Welch, G.R., Schreier, L.L., Dobrinsky, J.R. and Johnson, L.A. 1998. Theriogenology. 49(1):363. abstr.
	Loy, R.G. and Hughes, J.P. 1965. The effects of human chorionic gonadotropin on ovulation, length of estrus, and fertility in the mare. Cornell Vet. 56:41-50.
	Lu, K.H., et al., AIn Vitro Fertilization with Flow-Cytometrically-Sorted Bovine Sperm@, Theriogenology 52, 1999, pp. 1393-1405.
	Lynch, I. M., et al., "Influence of timing of gain on growth and reproductive performance of beefreplacement heifers." I. Anim. Sci. 75:1715. 1997
	Macmillan, K.L. and A.M. Day, "Prostaglandin F2a - A Fertility Drug In Dairy Cattle?",, Ruakura Animal Research Station, Private Bag, Hamilton, New Zealand, Theriogenology, September 1982, Vol. 18 No. 3, pages 245-253
	Martin, A. H., et al., "Characteristics of youthful beef carcasses in relation to weight, age and sex .3. meat quality attributes." Canadian I. Anim. Sci. 51:305. 1971
	Martin, L. C., J. S. Brinks, R. M. Bourdon, and L. V. Cundiff. "Genetic-effects on beef heifer puberty and subsequent reproduction." J. Anim. Sci. 70:4006. 1992
	Matsuda, Y. and Tobari, I. 1988. Chromosomal analysis in mouse eggs fertilized in vitro with sperm exposed to ultraviolet light (UV) and methyl and ethyl methanesulfonate (MMS and EMS). Mutat. Res. 198:131-144.
	Matulis, R. J., F. K. Mckeith, D. B. Faulkner, L. L. Berger, and P. George. "Growth and carcass characteristics of cull cows after different times-on-feed." J. Anim. Sci. 65:669. 1987

Ch	Mauleon, P. "Recent research related to the physiology of puberty." Commission of the European Communities. The early calving of heifers and it's impact on beef production. 1975
	Maxwell, W.M.C., Evans, G., Rhodes, S.L., Hillard, M.A. and Bindon, B.M. 1993. Fertility of Superovulated Ewes after Intrauterine or Oviductal Insemination with Low Numbers of Fresh or Frozen-Thawed Spermatozoa. Reprod. Fertil. Dev. 5:57-63.
	Maxwell, W. and Johnson, L., AChlortetracycline Analysis of Boar Spermatozoa after Incubation, Flow Cytometric Sorting, Cooling, or Cryopreservation@, Molecular Reproduction and Development 46, 1997, pp. 408-418.
	Mccomlick, R. J. "The flexibility of the collagen compartment of muscle." Meat Sci. 36:79. 1994
	McCue, P.M., Fleury, J.J., Denniston, D.J., Graham, J.K. and Squires, E.L. 1997. Oviductal insemination in the mare. 7th Int Symp. Eq. Reprod. 133. abstr.
	McCue, P.M. 1996. Superovulation. Vet. Clin. N. Amer. Eq. Prac. 12:1-11.
	McDonald, L.E. 1988. Hormones of the pituitary gland. <i>In:</i> Veterinary Pharmacology and Therapeutics. 6 <sup>th</sup> ed. Edited by N.H. Booth and L.E. McDonald. Ames, Iowa State Univ. Press. pp. 590.
	McKenna, T., Lenz, R.W., Fenton, S.E. and Ax, R.L. 1990. Nonreturn rates of dairy cattle following uterine body or comual insemination. J. Dairy Sci. 73:1179-1783.
	McKinnon, A. and Voss, J., AEquine Reproduction@, Lea & Febiger, Philadelphia, 1993, pp 291, 299 - 302, 345 - 348, 739 - 797.
	McKinnon, A. et al, 1993. Predictable ovulation in mares treated with an implant of the GnRH analogue deslorelin. Eq. Vet. J. 25:321-323.
	McKinnon, A.O. et al, 1996. Repeated use of a GnRH analogue deslorelin (Ovuplant) for hastening ovulation in the transitional marc. Eq. Vet. J. 29:153-155.
CM	McNutt, M. and Johnson, L., AFlow Cytometric Sorting of Sperm: Influence on Fertilization and Embryo/Fetal Development in the Rabbit@, Molecular Reproduction and Development 43, 1996, 261-267.
	Meilgaard, M., G. V. Civille, and B. T. Carr. "Sensor Evaluation Techniques." CRC Press Inc., Boca Raton, FL. 1991
CM	Meinert, C., et al., AAdvancing the time of ovulation in the mare with a short-term inplant releasing the GnRH analogue deslorelin@, Equine Veterinary Journal, 25, 1993, pp 65 - 68.
	Merton, J., et al., AEffect of Flow Cytometrically Sorted Frozen/Thawed Semen on Success Rate of In Vitro Bovine Embryo Production@, Theriogenology 47, 1997, pp. 295.
	Meyers, P.J., Bowman, T., Blodgett, G., Conboy, H.S., Gimenez, T., Reid, M.P., Taylor, B.C., Thayer, J., Jochle, W. and Trigg, T.E. 1997. Use of the GnRH analogue, deslorelin acetate, in a slow release implant to accelerate ovulation in oestrous mares. Vet. Rec. 140:249-252.
	Michaels, Charles, ABeef A.I. Facilities that work@, Proc. Fifth N.A.A.B Tech. Conf. A.I. Reprod. Columbia, MO. pp. 20-22.
	Michel, T.H., Rossdale, P.D. and Cash, R.S.G. 1986. Efficacy of human chorionic gonadotrophin and gonadatrophin releasing hormone for hastening ovulation in Thoroughbred mares. Eq. Vet. J. 6:438-442.
	Miller, S.J. 1986. Artificial Breeding Techniques in Sheep. In Morrow, D.A. (ed): Current Therapy in Theriogenology 2. Philadelphia, WB Saunders.
	Mirskaja, L.M. and Petrapavlovskii, V.V. 1937. The reproduction of normal duration of heat in the mare by the administration of Prolan. Probl. Zivotn. Anim. Breed. Abstr. 5:387.
	Moe, P. W., H. F. Tyrrell, and W. P. Flatt. "Energetics ofbodytissue mobilization." J. of Dairy Sci. 54:548.
	Molinia, F.C., Gibson, R.J., Brown, A.M., Glazier, A.M. and Rodger, J.C. 1998. Successful fertilization after superovulation and laparoscopic intrauterine insemination of the brushtail possum, <i>Trichosurus vulpecula</i> , and tammar wallaby, <i>Macropus eugenii</i> . J.Reprod. Fert. 112:9-17.
	Moms, s. T., et al., "Biological efficiency: How relevent is this concept to beef cows in a mixed livestock seasonal pasture supply context?" Proceedings of the New Zealand Society of Animal Production 54:333. 1994
	Monensin." J. Anim. Sci. 55:357-362. 1982
	Moran, C., J. F. Quirke, and J. F. Roche. "Puberty in heifers -a review." Animal Reproduction Sci. 18:167. 1989
	Morcom, C.B. and Dukelow, W.R. 1980. A research technique for the oviductal insemination of pigs using laparoscopy. Lab. Anim. Sci. 1030-1031.

·	
Cu	Morgan, J. B., et al., "National beef tenderness survey." J. Anim. Sci.69:3274. 1991
	Morris, L.H., et al., @Hysteroscopic insemination of small numbers of spermatozoa at the uterotubal junction of preovulatory mares@, Journal of Reproduction and Fertility, Vol. 118, pp. 95-100 (2000)
	Moseley, W. M., et al., 1982. "Relationship of Growth and Puberty in Beef Heifers Fed
	Mount, D. E. "Fibrous and non-fibrous carbohydrate supplementation to ruminants grazing forage from small grain crops." M.S. Thesis. Colorado State University. 2000
	Muller, W. and Gautier, F. 1975. Interactions of heteroaromatic compounds with nucleic acids. Euro. J Biochem. 54:358.
	Munne, S. 1994. Flow cytometry separation of X and Y spermatozoa could be detrimental to human embryos. Hum. Reprod. 9(5):758
	Myers, S. E., et al., "Comparison of three weaning ages on cow-calfperformance and steer carcass traits."  J. Anim. Sci. 77:323, 1999
	Myers, S. E., "Performance and carcass traits of early-weaned steers receiving either a pasture growing period or a finishing diet at weaning." J. Anim. Sci. 77:311. 1999
	Myers, S. E., et al., "Production systems comparing early weaning to normal weaning with or without creep feeding for beef steers." J. Anim. Sci. 77:300. 1999
	Nix, I. P., I. C. Spitzer, and P. I. Chenoweth. "Serum testosterone concentration, efficiency of estrus detection and libido expression in androgenized beef cows." Therio. 49: 1195. 1998
	Nowshari, et al., "Superovulation of Goats with Purified pFSH Supplemented with Defined Amounts of pLH", Theriogenology, Vol 43, 1995, pp 797-802.
	Nowshari, et al., Theriogenology, Vol 43, 1995, pp 797-802.
	NRC. Nutrient requirements for beef cattle. National Academy of Sci. National Research Council, Washington, DC. 1996
	Olson, S.E. and Seidel, G.E. Jr., AReduced Oxygen Tension and EDTA improve Bovine Zygote Development in a Chemically Defined Medium@, Journal of Animal Science 78, 2000, pp. 152-157.
	Owen, J. B. "The maiden female-a means of increasing meat production." Proc. Symp. on the use of once bred heifers and gilts. 1973
	Pace, M.M. and Sullivan, J.J. 1975. Effect of timing of insemination, numbers of spermatozoa and extender components on pregnancy rates in marcs inseminated with frozen stallion semen. J Reprod. Fert. Suppl. 23:115-121.
	Parent US Application 09/001,394, entitled ASheath Fluids and Collection Systems for Sex-Specific Cytometer Sorting of Sperm@, filed on December 31, 1997, 87 total pages which includes four drawings.
	Parrish, J.J. "Capacitation of Bovine Sperm by Heparin", Department of Meat and Animal Science, University of Wisconsin, Madison, WI 53706, Biology Of Reproduction 38, 1988, pp 1171-1180.
	Parrish, J., et al., ACapacitation of Bovine Sperm by Heparin@, Technology of Reproduction 38, 1988, pp. 1171-1180.
	PCT application PCT/US98/27909, filed 31 December 1998, entitled "Commercially Practical Sex- Specific Insemination of Mammals".
	PCT application PCT/US99/17165, filed 28 July 1999, entitled "Equine System for Non-Surgical Artificial Insemination".
	Peippo, J., et al., ASex diagnosis of equine preimplantation embryos using the polymerase chain reaction@, Theriogenology, Vol. 44 619-627 (1995)
	Perry, E.J. 1968. Historical Background In: The Artificial Insemination of Farm Animals. 4th ed. Edited by E.J. Perry. New Brunswick, Rutgers University Press, pp. 3-12.
	Petersen, G.A., et al, "Cow and Calf Performance and Economic Considerations of Early Weaning of Fall-Born Beef Claves", J. Anim. Sci., 1987, 64:15, pp 15-22.
	Peterson, G. A., et al., "Cow and calfperformlance and economic-considerations of early weaning offal 1-born beef-calves." J. Anim. Sci. 64:15. 1987
	Petit, M. "Early Calving in Suckling Herds." In: (Ed.) J.C. Taylor. The early calving of heifers and it's impact on beef production, 157. 1975
CM	Pickett, B.W., Burwash, L.D., Voss, J.L. and Back, D.G. 1975b. Effect of seminal extenders on equine fertility. J. Anim. Sci. 40:1136-1143.
0	Piekett OW, et al., AManagement of the mare for maximum reproductive efficiency@ Bulletin No. 6 Colorado State University, Ft. Collins CO. (1989)

CM	Pickett, B.W. and Back, D.G. 1973. Procedures for preparation, collection, evaluation and insemination of stallion semen. C.S.U. Exp. Sta. Artira. Reprod. Lab. Gen. Series Bull. 935.
On	Pickett, B.W, et al., 1976. Factors influencing the fertility of stallion spermatozoa in an A.I. program. Proc. 8 <sup>th</sup> Internat. Congr. Anim. Reprod. A.I. Krakow, Poland. 4: 1049 - 1052.
	Pickett GW, et al., AManagement of the mare for maximum reproductive efficiency@ Bulletin No. 6 Golorado State University, Ft. Collins CO. (1989)
Oh	Pickett, B.W., and Shiner, K.A., A Recent developments in artificial insemination in horses@, Livestock Production Science, 40, 1994, pp 31 - 36.
	Pinkel, D., Gledhill, B.L., Van Dilla, M.A., Stephenson, D. and Watchmaker, G. 1982b. High resolution DNA measurements of mammalian spermatozoa. Cytometry. 3:1-9. (1982b)
	Pinkel, D., et al, AFlow Cytometric Determination of the Proportions of X- and Y- Chromosome-Bearing Sperm in Samples of Purportedly Separated Bull Sperm@, Journal of Animal Science, Vol. 60, No. 5, 1985, pp 1303 - 1307.
	Polge, E. J., AHistorical Perspective of AI: Commercial Methods of Producing Sex Specific Semen, IVF Procedures@, Proceedings of the 16th Technical Conference on Artificial Insemination & Reproduction, Cambridge, England, 1996, pp. 7-11.
	Purvis, H. T. and J. C. Whittier. "Effects ofionophore feeding and anthelmintic administration on age and weight at puberty in spring-bom beef heifers." J. Anim. Sci. 74:736-744. 1996
	Randel, R. D. "Nutrition and postpartum rebreeding in cattle." J. Anim. Sci. 68:853. 1990
	Rath, D., et al., ALow Dose Insemination Technique in the Pig@, Boar Semen Preservation IV, 2000, pp. 115-118.
	Rath, D., et al., AProduction of Piglets Preselected for Sex Following in Vitro Fertilization with X and Y Chromosome-Bearing Spermatozoa Sorted by Flow Cytometry@, Theriogenology, 47, 1997, pp 795 - 800.
	Reiling, B. A., "Effect of prenatal androgenization on perfonnance, lactation, carcass, and sensory traits ofheifers in a single-calfheifer system." J. Anim. Sci. 73:986. 1995
	Reiling, B.A., et al., "Effect of Prenatal Androgenization on Preformance, Location, and Carcass and Sensory Traits on Heifers in Single Calf Heifer System", J. Anim. Sci., 1995, 73: 986, pp 986-992.
	Reiling, B. A., "Effects of prenatal androgenization, melengestrol acetate, and synovex-h(r) on feedlot performance, carcass, and sensory traits of once-calved heifers." J. Anim. Sci. 74:2043. 1996.
	Reiling, B. A., J. K. Drackley, L. R. Grum, and L. L. Berger. "Effects of prenatal androgenization and lactation on adipose tissue metabolism in finishing single-calfheifers." J. Anim. Sci. 75:1504. 1997
	Rens, W., et al., AA Novel Nozzle for More Efficient Sperm Orientation to Improve Sorting Efficiency of X and Y Chromosome-Bearing Sperm@, Technical Notes, Cytometry 33, 1998, pp 476-481.
	Rens, W., et al., AImproved Flow Cytometric Sorting of X- and Y- Chromosome Bearing Sperm: Substantial Increase in Yield of Sexed Semen@, Molecular Reproduction and Development, 1999, pp 50-56.
	Rieger, D., et al, AThe Relationship Between the Time of First Cleavage of Fertilized Cattle Oocytes and Their Development to the Blastocyst Stage@, Theriogenology, 1999, pp. 190.
	Ritar, A. and Ball, A. 1991. Fertility of young cashmere goats after laparoscopic insemination. J. Agr. Sci. 117:271-273.
	Roberts, J.R. 1971. In: Veterinary Obstetrics and Genital Diseases. Ithaca, New York. pp. 740-749.
	Romita, A. "Some considerations on the beef situation in Italy." (Ed.) J.C. Taylor. The early calving of heifers and it's impact on beef production. 23. 1975
	Roser, JF., Evans, J.W., Kiefer, DP., Neeley, D.P. and Pacheco, C.A. 1980. Reproductive efficiency in mares with anti-hCG antibodies. Proc 9 <sup>th</sup> Int. Congr. Artira. Repro. and A.I. 4:627. abstr.
	Roth, T.L., Wolfe, B.A., Long, J.A., Howard, J. and Wildt, D.E. 1997. Effects of equine chorionic gonadotropin, human chorionic gonadotropin, and laparoscopic artificial insemination on embryo, endocrine, and luteal characteristics in the domestic cat. Bio Reprod. 57:165-171.
	Roux, M., J. H. Teissier, J. Bonnemaire, and R. Dumont. "Early calving heifers versus maiden heifers for beef-production from dairy herds. I." The effects of genotype (Friesian and Charolais x Friesian) and 2 feeding levels in the rearing period on growth and carcass quality. Livestock Prod. Sci.16:1. 1987
	Rowley, H-S., Squires, E.L. and Pickett, B.W. 1990. Effect ofinsemination volume on embryo recover}' in mares. J. Equine Vet. Sci. 10:298-300.
	Roy, J. H. B. "Rearing dairy-herd replacements." J. of the Soc. of Dairy Technology 31:73-79. 1978
1	

СM	Rutter, L. M., et al., "Effect of abomasal infusion of propionate on the GnRH-induced luteinizing-hormone release in prepuberal heifers." J. Anim. Sci. 56:1167. 1983
	Salamon, S. 1976. Artificial Insemination of Sheep. Chippendale, New South Whales. Publicity Press. p.83-84.
	Salisbury, G.W. and VanDemark, N.L. 1961. Physiology of Reproduction and Artificial Insemination of Cattle. San Francisco: Freeman and Company.
	SAS, SAS/STAT 7 User=s Guide (Release 6.03), SAS Inst. Inc., Cary, NC., 1988. 3 pages
	SAS. "The SAS System for Windows." Ver 7.0. ReI 6.12. SAS Inst.Inc., Cary, NC. 2000
	Schenk, J. L., T. K. Suh, D. G. Cran, and G. E. Seidel. "Cryopreservation of flow-sorted bovine spennatozoa." Therio. 52:1375. 1999
	Schenk, J.L., ACryopreservation of flow-sorted bovine spermatozoa@, Theriogenology, Vol. 52, 1375-1391 (1999)
	Schenk, J.L. and Seidel, Jr., G.E., "Imminent Commercialization of Sexed Bovine", Proceedings, The Range Beef Cow Symposium XVL, 1999, pp 89-96.
	Schillo, K. K., J. B. Hall, and S. M. Hileman. "Effects of nutrition and season on the onset of puberty in the beef heifer." J. Anim. Sci. 70:3994. 1992
	Schmid R.L., et al, AFertilization with Sexed Equine Spermatozoa Using Intracytoplasmic Sperm Injection and Oviductal Insemination ", 7th International Symposium On Equine Reproduction, pp. 139 (Abstract) (1998)
	Schnell, T. D., K. E. Belk, J. D. Tatum, R. K. Miller, and G. C. Smith. "Performance, carcass, and palatability traits for cull cows fed high-energy concentrate diets for 0, 14,28,42, or 56 days." J. Anim. Sci. 75:1195.
	Schoonmaker, J. P., et al., "Effects of age at weaning and implant strategy on growth of steer calves." J. Anim. Sci. (SuppI2) 76:71 (Abstr.). 1998
	Seidel, G. E., "Insemination of heifers with sexed sperm." Therio. 52:1407. 1999
	Seidel, G. E. and L. A. Johnson. "Sexing mammalian spenn -overview." Therio. 52: 1267. 1999
	Seidel, Jr., G.E.et al, "Insemination Of Heifers With Very Low Numbers Of Frozen Spermatozoa", Colorado State University (1996)
	Seidel, G.E. Jr., Cran, D.G., Herickoff, L.A., Schenk, J.L., Doyle, S.P. and Green, R.D. 1999. Insemination of heifers with sexed frozen or sexed liquid semen. Theriogenology. 51. (in press). abstr.(1999)
	Seidel, G. Jr., AUse of Sexed Bovine Sperm for In Vitro Fertilization and Superovulation@, Animal Reproduction and Biotechnology Laboratory, Colorado State University, Fort Collins, CO, Proceedings of the 2000 CETA/ACTE Convention, Charlottetown, Prince Edward Island, August 2000, pp. 22-24.
	Seidel, Jr., G. E., et al, "Insemination of Holstein Heifers With Very Low Numbers Of Unfrozen Spermatozoa", Colorado State University, Atlantic Breeders Cooperative, (1995)
	Seidel, Jr., G. B., "Artificial Insemination With X-and Y-Bearing Bovine Sperm", Animal Reproduction and Biotechnology Laboratory, Colorado State University, (1996)
	Scidel, G.E. Jr, et al., AInsemination of Heifers with Sexed Sperm A, Theriogenology, Vol. 52, pp. 1407-1421 (1999)
	Seidel, G.E. Jr, et al., AArtificial Insemination of Heifers with Cooled, Unfrozen Sexed Semen A, Theriogenology, Vol. 49 pp. 365 (Abstract) (1998)
$\mathcal{O}$ M	Seidel, G.E. Jr., "Uterine Horn Insemination of Heifers With Very Low Numbers of Nonfrozen and Sexed Spermatozoa", Atlantic Breeders Cooperative, Theriogenology 48: pp. 1255-1264, (1997)
	Sell, R. S., D. L. Watt, R. D. Little, and T. A. Petry. "Single-caltheiter profitability compared to other north dakota beef production systems." Department of Ag. Eco., North Dakota State University, Ag. Econ. Rpt. 20.
CM	Senger, P.L., Becker, W.C., Davidge, S.T., Hillers, J.K. and Reeves, J.J. 1988. Influence of comual insemination on conception rates in dairy cattle. J Anim. Sci. 66:3010-3016.
	Shackelford, S. D., M. Koohmaraie, and T. L. Wheeler. "Effects of slaughter age on meat tenderness and usda carcass maturity scores of beef females." I. Anim. Sci. 73:3304. 1995
	Shelton, J.N. and Moore, N.W. 1967. The response of the ewe tot pregnant mare gonadotropin and to horse anterior pituitary extract. J. Reprod. Fert. 14:175 - 177.

CA	Shilova, A.V., Platov, E.M. and Lebedev, S.G. 1976. The use of human chorionic gonadothrophin for ovulation date regulation in mares, VIIIth Int. Congr. On Anim. Repro. and A.l. 204-208.
(	Shorthose, W. R. and P. V. Harris. "Effect of animal age on the tenderness of selected beef muscles." I. Food Sci. 55:1 1990
	Siedel, G.E., AStatus of Sexing Semen for Beef Cattle@, Texas A&M University 45th Annual Beef Cattle Short Course and Trade Show Proceedings, August 9-11, 1999; pp.III 24-III 27
	Silbennann, M., "Honnones and Cartilage. Cartilage: development, differentiation, and growth." pp. 327-368. Academic Press, Inc. 1983
	Simon, M., "The effect of management option on the perfonnance of pregnant feedlot heifers." M.S. Thesis. Kansas State University. 1983
	Smith, G. C., B. W. Berry, J. W. Savell, and H. R. Cross. "USDA maturity indexes and palatability ofbeefrib steaks." J. of Food Quality 11:1. 1988
	Smith, G. C., et al., "Relationship ofusda maturity groups to palatability of cooked beef." J. of Food Sci. 47:1100. 1982
	Squires, E.L., AEarly Embryonic Loss@ in Equine Diagnostic Ultrasonography, 1st Ed. pp 157-163 Eds Rantanen & McKinnon. Williams and Wilkins, Baltimore, Maryland (1998)
	Squires, E.L., Moran, D.M., Farlin, ME., Jasko, D.J., Keefe, T.J., Meyers, S.A., Figueiredo, E., McCue, P.M. and Jochle, W. 1994. Effect of dose of GnRH analogue on ovulation in mares. Theriogenology. 41:757-769.
an	Squires, E., ASimultaneous Analysis of Multiple Sperm Attributes by Flow Cytometry@, Diagnostic Techniques and Assisted Reproductive Technology, The Veterinary Clinics of North America, Equine Practice, Vol. 12, No. 1, April 1996, pp127 - 130.
	Squires, E.L., et al, ACooled and frozen stallion semen@, Bulletin No. 9, Colorado State University, Ft. Collins, CO. (1999)
CM	Steel, Nanette L. "Cost Effectiveness of Utilizing sexed semen in a commercial beef cow operation, 1997-2006", Dept. of Agriculture and Resource Ecomonics, Summer 1998
	Stellflug, J. N., D. K. Ran, R. D. Randel, and Eo L. Moody. "Plasma estrogens in peri-parturient cow." Therio 10:269. 1978
	Stevenson, J. S., M. W. Smith, J. R. Jaeger, L. R. Corah, and D. G. Lefever. "Detection of estrus by visual observation and radiotelemetry in peripubertal, estrus-synchronized beefheifers." J. Anim. Sci. 74:729. 1996
	Story, C. E., R. J. Rasby, R. T. Clark, and C. T. Milton. "Age of calf at weaning of spring-calving beef cows and the effect on cow and calf perfomlance and production economics." J. Anim. Sci. 78:1403. 2000
	Sullivan, J.J., Parker, W.G. and Larson, LL. 1973. Duration of estrus and ovulation time in nonlactating mares given human chorionic gonadotropin during three successive estrous periods. J.A.V.M.A. 162:895-898.
	Swanson, E. W. "Future research on problems of increasing meat production by early calving." Comm. Eur. Commun., Eur. 5545.1975. The Early Calving of Heifers and its Impact on Beef Production.
	Taljaard, T.L., Terblanche, S.J., Bertschinger, H.J. and Van Vuuren, L.J. 1991. The effect of the laparoscopic insemination technique on the oestrus cycle of the ewe. J. S Afr. Vet. Assoc. 62(2):60-61.
	Tatum, J. D., G. C. Smith, B. W. Berry, C. E. Murphey, F. L. Williams, and Z. L. Carpenter. "Carcass characteristics, time on feed and cooked beef palatability attributes." J. Anim. Sci. 50:833. 1980
	Taylor, S. C. S., A. J. Moore, R. B. Thiessen, and C. M. Bailey. "Efficiency of food utilization in traditional and sex-controlled systems of beef-production." Animal Production 40:401. 1985
	Taylor, C.S., Moore, A.J. Thiessen, R.B. and Bailey, C.M., AFRC Animal Breeding Research Organisation, West Mains Road, Edinburg EH9 3JQ, AEfficiency of Food Utilization in Traditional and Sex-Controlled Systems of Beef Production@, pp 401-440.
	Tervit, H.R., et al., ASuccessful Culture In Vitro of Sheep and Cattle Ova@, Agricultural Research Council, Unit of Reproduction Physiology and Biochemistry, University of Cambridge, 1972, p. 493-497.
	Unruh, J. A. "Effects of endogenous and exogenous growth-promoting compounds on carcass composition, meat quality and meat nutritional-valu" J. Anim. Sci. 62:1441. 1986
ar.	US Application 60/211093, entitled Aintegrated System for Herd Management Using Sexed Semen@, filed June 12, 2000.

US Application , 09/511,959 entitled AMethods For Improving Sheath Fluids and Collection Systems For Sex-Specific Cytometer Sorting of Sperm@, filed February 23, 2001.
US Applieution 09/015, 454, entitled ASystem for Improving Yield of Sexed Embryos in Mammals@, filed on January 29, 1998, 59 total pages which includes drawings.
US Application , 09/511,959 entitled AMethods For Improving Sheath Fluids and Collection Systems For Sex-Specific Cytometer Sorting of Sperm@, filed February 23, 2001.
US Application 60/211093, entitled AIntegrated System for Herd Management Using Sexed Semen@, filed June 12, 2000.
US Application, 09/454,488, entitled Almproved Flow Cytometer Nozzle and Flow Cytometer Sample Handling Methods@, filed December 3, 1999.
US Application, 60/224,050, entitled A Integrated System for Herd Management with Terminal-cross Program Using sexed semen, filed August 9, 2000
US Application, 60/238,294, entitled Allysteroscopic Insemination of Mares@ filed October 5, 2000.
US Application Serial Number 60/203,089, entitled A Detector System for Resolving Small Differences in Photo-generated Signal@, filed May 9, 2000.
US Application Serial Number 60/113,143, entitled AEquine Insemination System@, December 18, 1998.
US Application 09/001,394, entitled ASheath Fluids and Collection Systems for Sex-Specific Cytometer Sorting of Sperm@, filed on December 31, 1997, 87 total pages which includes four drawings.
US Application Serial Number 60/094,720, entitled ASystem for Low Dose Insemination of Equines@, filed July 30, 1998.
US Application Serial Number 60/224,050., entitled AIntegrated System for Herd Management With Terminal-Cross Program Using Sexed Semen@, filed August 9, 2000.
US Application entitled ASystem For Separating Prozen-Thawed Sperm Cells Into X-Chromosome And Y-Chromosome Bearing Populations@, filed November 28, 2000.
US Application, 09/448,643, entiled AMultiple Sexed Embryo Production System for Mammals@, filed November 24, 1999.
WS Application , 09/454,488, entitled AImproved Flow Cytometer Nozzle and Flow Cytometer Sample Handling Methods@, filed December 3, 1999.
USDA "Official United States standards for grades of carcass beef." Agric, Marketing Serv., USDA .Washington, DC. 1997
Vazquez, J. et al., ANonsurgical Uterotubal Insemination in the Mare@, Proceedings of the 44th Annual Convention of the American Association of Equine Practitioners, Baltimore, Maryland, December 6-9, 1998, Vol. 44, pp 68-69
Vazquez, J., et al., ADevelopment of a Non-surgical Deep Intra Uterine Insemination Technique@, IV International Conference on Boar Semen Preservation, Maryland, August, 1999, p 35 and photo of display board.
Vazquez, J., et al., AA.I. in Swine; New Strategy for Deep Insemination with Low Number of Spermatozoa Using a Non-surgical Methodology@, 14th International Congress on Animal Reproduction Vol. 2, Stockhlom, July, 2000, p. 289.
Vazquez, J., et al., ASuccessful Low-Dose Insemination by a Fiberoptic Endoscope Technique in the Sow @, Proceedings Annual Conference of the International Embryo Transfer Society, Netherlands, Theriogenology, Vol. 53, January, 2000, pp. 201.
Vazquez, J., et al.,@Hypoosmotic Swelling Test as Predictor of the Membrane Integrity in Boar Spermatozoa@@, Boar Semen Preservation IV, IVth International Conference on Boar Semen Preservation, Maryland, pp. 263.
Vidament, M., Dupere, A.M., Julienne, P., Evain, A., Noue, P. and Palmer, E. 1997. Equine frozen semen freezeability and fertility field results. Theriogenology. 48:907.
Vidament, M., Dupere, A.M., Julienne, P., Evain, A., Noue, P. and Palmer, E. 1997. Equine frozen semen freezeability and fertility field results. Theriogenology. 48:907.
Vincent, B. C., S. D. M. Jones, L. E. Jeremiah, M. A. Price, and J. A. Newman. "Carcass characteristics and meat quality of once-calved heifers." Canadian J. Anim. Sci. 71:311, 1991
Voss, J.L. and Pickett, B.W. 1976. Reproductive management of the broodmare. C.S.U. Exp. Sta. Anim. Reprod. Lab. Gen. Series. Bull. 1-12

	<b>.</b>			
CM	Voss, J.L., Squires, E.L., Pickett, B.W., Shideler, R.K. and Eikenberry, D.J. 1982. Effect of number as frequency of inseminations on fertility in mares. J. Reprod. Fertil. Suppl. 32:53-57.			
	Voss, J.L., Pickett, B.W., Burwash, L.D. and Daniels, W.H. 1974. Effect of human chorionic gonadotropin on duration of estrous cycle and fertility of normally cycling, nonlactating mares. J.A.V.M.A. 165:704-706.			
	Waggoner, A. W., M. E. Dikeman, I. R. Brethour, and K. E. Kemp. "Performance, carcass, cartilage calcium, sensory and collagen traits of longissimus muscles of open versus 30-month-old heifers that produced one calf." I. Anim. Sci. 68:2380. 1990			
	Welch G.R., et al., 1994. Fluidic and optical modifications to a FACS IV for flow sorting of X- and Y-chromosome bearing sperm based on DNA. Cytometry 17 (suppl. 7): 74.			
	Welch, G., et al., AFlow Cytometric Sperm Sorting and PCR to Confirm Separation of X- and Y-Chromosome Bearing Bovine Sperm@, Animal Biotechnology, 6 (2), 131-139, 1995, pp 131 - 139.			
	Wheeler, T. L., L. v. Cundiff, and R. M. Koch. "Effect of marbling degree on beef palatability in Bos- Taurus and Bos-Indicus cattle." J. Anim. Sci. 72:3145. 1994			
	Wickersham, E. W. and L. H. Schultz. "Infilience of age at first breeding on growth, reproduction, and production of well-fed holstein heifers." J. Dairy Sci. 46:544, 1963			
	Wilson, M.S. 1993. Non-surgical intrauterine artificial insemination in bitches using frozen semen. J.Reprod. Fert Suppl. 47:307-311.			
	Wilson, C.G., Downie, C.R., Hughes, J.P. and Roser, J.F. 1990. Effects of repeated hCG injections on reproductive efficiency in mares. Eq. Vet. Sci. 4:301-308.			
	Woods, J., Bergfelt, D.R. and Ginther, O.J. 1990. Effects of time of insemination relative to ovulation on pregnancy rate and embryonic-loss rate in mares. Eq. Vet. J. 22(6):410-415.			
	Woods, J. and Ginther, O.J. 1983. Recent studies related to the collection of multiple embryos in mares. Theriogenology. 19:101 - 108.			
	XP-002103478, File Biosis, one page.			
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